

VARUN AJITH

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OBJECTIVE

BTech graduate in Robotics and Automation Engineering with hands-on experience in autonomous systems, control algorithms, and embedded hardware. Developed multi-legged search-and-rescue robots and shipborne drone landing solutions using ROS2, Gazebo, and advanced sensor fusion. Skilled in C++, Python, Ladder Logic, and real-world deployment of robotics platforms.

EDUCATION

BTech in Robotics and Automation, Saintgits College of Engineering, Kottayam 2019–2023
CGPA: 7.7

Higher Secondary Education, GHSS Ramapuram 2015–2017
Percentage: 85%

Secondary Education, Bishop Moore Vidyapith, Kayamkulam 2010–2015
Percentage: 80%

SKILLS

Programming: C++, Python, C, Ladder Logic
Robotics Tools: ROS, ROS2, Gazebo, OpenCV, SLAM, CAD
Hardware: Raspberry Pi, ESP32, Arduino, PLCs, LiDAR, IMU, GPS, Servo Motors
Soft Skills: Technical Documentation, Creative Thinking, Team Collaboration, Diligence

EXPERIENCE

Project Intern Oct 2024
Indian Institute of Science (IISc), Bangalore

- Collaborated on development of Shipborne Drone Landing System under Prof. Radhakanth Padhi.
- Calibrated servo motors to maintain horizontal landing pad alignment amid wave motion.
- Simulated drone dynamics and control algorithms in Gazebo for performance validation.

PROJECTS

Search and Rescue Robot:

- Designed six-legged robot with 18 HS-995MG servos, implementing tripod gait for terrain adaptability.
- Integrated RPLiDAR A1, Neo-6M GPS, and MPU6886 IMU, improving navigation accuracy by 5%.

Gesture-Controlled Robot Car:

- Developed hand-gesture interface with MPU6050 IMU on ESP32, enhancing responsiveness.
- Implemented low-latency wireless comms between two ESP32s, controlled DC motors via L298N.

Automated Metal Segregator:

- Engineered PLC-based conveyor sorter with optimized sensor placement for accuracy.
- Programmed Ladder Logic to reduce downtime and achieve 100% object count precision.

Auto Mains Fail (AMF):

- Designed seamless power-switching system using Allen-Bradley PLC.
- Simulated multiple failure scenarios and refined ladder logic for reliability.

CERTIFICATIONS

Completed a **PG Diploma in Industrial Automation** at SMEC Labs, Kochi, from August 2023- December 2023. Acquired expertise in PLC programming, SCADA systems, and industrial robotics.

PUBLICATIONS

Published a paper titled '**Search and Rescue Robot**' in *Volume 12, Issue 1, 2024* of the International Journal of Science, Engineering, and Technology (IJSET). The paper covers the development and deployment of an autonomous robot for emergency navigation